

TELEPHONE CALCULATOR

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to telephones and calculators and more specifically to an apparatus combining a miniaturized calculator with a telephone, both housed within the standard telephone chassis and operatively sharing a common input data keyboard.

2. Description of the Prior Art

The telephone has for some time been established as an indispensable item in our society, to an extent that at least one telephone is typically found within each family's home and upon each businessman's desk. Further, in the rapid pace of today's business world, the general purpose calculator has become a necessary and indispensable tool to the businessman who must have immediate access to the calculator throughout his working day. It is not uncommon, therefore, to find both a telephone and a general purpose calculator upon the businessman's desk, whether he is a broker, market analyst, insurance agent, banker, accountant, engineer, economist, retailer, or what have you. Not only must he have immediate access to the calculator in forming his daily decisions, but he oftentimes requires use of his calculator while simultaneously conversing with another on a telephone. All too often in the maze of paperwork cluttering his desk or through inadvertent misplacement, the businessman is at a loss to find his calculator when he most needs it, and especially when he is conversing on the telephone.

Although various styles of streamlined chassis have appeared as of late, the classic standard desk-type telephone chassis is still generally found in the home and is predominately employed by the business world. In contrast, however, miniaturized inexpensive portable electronic general purpose calculators, made possible by state-of-the-art technological innovations in microelectronics miniaturization, have generally replaced the bulky mechanical and electric general purpose calculators for daily calculations, both at home and in the business world. Use of the small (hand-held) electronic calculators makes it even easier for the businessman to misplace his calculator in the active pursuit of his daily activities.

Computation system aids for the businessman, which used the dial or push-button input capabilities of a standard telephone for providing input data to a centralized calculator or computer have appeared in the prior art. These systems typically employ the sound producing properties of the input apparatus of a telephone for translating data entered upon the telephone dial or keyboard into electrical signals for transmission thereof to a remotely located computer. The telephone itself, therefore, is employed as a remote data input terminal for the distant computer. Such systems, generally demand the undivided attention of the telephone employed for the remote transmission, and subsequent reception, such that a user cannot simultaneously use the telephone for carrying on a conversation with another. Further, any input data entered into the remote computer by means of the telephone terminal, or any results of manipulative or arithmetic operations performed upon such data by the computer are not readily visible to the user. These systems typically require print-out or read-out apparatus independent of the telephone.

The inverse of the remote telephone terminal also appears in the prior art. This type of system employs a keyboard of a standard adding machine operatively connected with a translator matrix and a tone-code transmitter for converting any input data entered upon the adding machine keyboard into coded tones for transmission over telephone lines or similar channels to a centralized calculator or computer.

The prior art systems, while enabling remote computer access by a person from his desk, are not practically or economically feasible for use in the office of every businessman for carrying on his routine daily calculations. Besides their relatively high cost, these systems typically requires access to a larger computer and some knowledge of its input programming format; such requirements are not generally suited for the average businessman. Further, such systems, by providing access to sophisticated centralized calculating or computer apparatus by a large number of time sharing users, demand extra time of those users. A user must ask for a slice of the computer's time and then wait for the computer to perform his entered program. Further, due to the costs and time involved, it is generally not in the best interests of a user to employ the large centralized computer for his more simple daily routine calculations. Another disadvantage of using a telephone operated remote terminal for the typical businessman, is that his use of such terminal precludes him from simultaneously employing that telephone for its normal purpose of conversing with another.

Applicant's invention overcomes these problems of the prior art for the businessman by providing a miniaturized general purpose calculator directly within the standard telephone chassis normally found on his desk, and readily accessible to him at all times. He is immediately provided with a visual indication of his entered input data and of the results of the calculations or arithmetic manipulations performed, and can simultaneously perform such calculations while conversing in normal fashion on the same telephone.

While the present invention will be described in conjunction with its use in the standard telephone chassis now typically employed throughout the telephone industry, it will be understood that the invention is not limited to this specific shape or form of chassis, but is equally applicable for use with any telephone module. Further, while the present invention as described, uses a specific type of electronic calculator, employing specific function input selections, it will be understood that the invention is not limited to the use of this particular electronic calculator, but that other calculators (both more or less complex, and employing different function selections) may be employed without departing from the spirit or intention of this invention.

SUMMARY OF THE INVENTION

Applicant's invention uniquely combines an electronic general purpose calculator and a standard telephone having a push-button selector keyboard within the chassis of a standard telephone. The calculator forms an integral part of the telephone, and operatively shares the telephone's selector keyboard for receiving its input data.

Input stimuli entered by means of the shared input selector keyboard may alternatively be employed to enter an encoded telephone number to telephone circuits within the chassis or to enter digital information to the calculator circuits within the chassis. The tele-